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In the Claims:

Please cancel claims 29-34 and amend claims 1, 15, and 22 as set forth below:

1. (Currently Amended) A method for controlling an intensity distribution of radiation directed to a microlithographic substrate, comprising:

directing a radiation beam from a radiation source along a radiation path, the radiation beam having a first distribution of intensity as a function of location in a plane generally transverse to the radiation path;

impinging the radiation beam on an adaptive structure positioned in the radiation path;

changing an intensity distribution of the radiation beam from the first distribution to a second distribution different than the first distribution by changing a state of a first portion of the adaptive structure relative to a second portion of the adaptive structure;

directing the radiation beam away from the adaptive structure along the radiation path; and

passing the radiation beam directed away from the adaptive structure through a reticle positioned between the adaptive structure and the microlithographic substrate; and

~~impinging the radiation beam directed away from the adaptive structure on the microlithographic substrate.~~

2. (Original) The method of claim 1 wherein the adaptive structure includes a reflective surface having a first portion coupled to a first actuator and a second portion coupled to a second actuator, and wherein impinging the radiation beam includes impinging a first portion of the radiation beam on the first portion of the reflective surface and impinging a second portion of the radiation beam on the second portion of the reflective surface, and wherein changing a state of the first portion of the adaptive structure relative to a second portion of the adaptive structure includes

moving the first portion of the reflective surface relative to the second portion of the reflective surface, and wherein the method further comprises:

reflecting at least part of the first portion of the radiation beam toward a portion of a grating having a first transmissivity and reflecting at least part of the second portion of the radiation beam toward a portion of the grating having a second transmissivity greater than the first transmissivity; and passing at least part of the second portion of the radiation beam through the grating to impinge on the microlithographic substrate.

3. (Original) The method of claim 1 wherein the microlithographic substrate is a first microlithographic substrate having a layer of radiation-sensitive material, and wherein the method further comprises:

passing the radiation beam with the second intensity distribution through a reticle and onto the radiation-sensitive material to form an image on the radiation sensitive material;

forming features in the first microlithographic substrate based on the image formed on the radiation sensitive material;

determining characteristics of the features formed in the first microlithographic substrate;

based on the determined characteristics, changing an intensity distribution of the radiation beam from the first distribution to a third distribution different than the first and second distributions by changing a state of at least one of the first and second portions of the adaptive structure; and

impinging the radiation beam with the third intensity distribution on a second microlithographic substrate.

4. (Original) The method of claim 1 wherein the adaptive structure includes a selectively transmissive medium, and wherein changing a state of the first portion of the adaptive structure relative to the second portion includes changing a transmissivity of the first portion to be different than a transmissivity of the second portion.

5. (Original) The method of claim 1 wherein the adaptive structure includes a liquid crystal material, and wherein changing a state of the first portion of the adaptive structure relative to the second portion includes changing a transmissivity a first portion of the liquid crystal material relative to a transmissivity of a second portion of the liquid crystal material.

6. (Original) The method of claim 1, further comprising:

passing the radiation beam through a reticle positioned between the adaptive structure and the microlithographic substrate to form an image on the microlithographic substrate; and

scanning the reticle and the microlithographic substrate relative to each other by moving the reticle along a reticle path generally normal to the radiation path proximate to the reticle and moving the microlithographic substrate along a substrate path in a direction opposite the reticle and generally normal to the radiation path.

7. (Original) The method of claim 1, further comprising:

passing the radiation beam through a reticle positioned between the adaptive structure and the microlithographic substrate to form an image on the microlithographic substrate; and

stepping the microlithographic substrate and the reticle relative to each other by impinging the radiation on a first field of the microlithographic substrate while the microlithographic substrate is in a first fixed transverse alignment relative to the reticle, moving at least one of the reticle and the microlithographic substrate transversely relative to the other to align a second field with the reticle, and exposing the second field to the radiation while the microlithographic substrate is in a second fixed transverse alignment relative to the reticle.

8. (Original) The method of claim 1 wherein changing the intensity distribution of the radiation beam includes changing each portion of the second distribution by no more than about ten percent relative to the corresponding portion of the first distribution.

9. (Original) The method of claim 1 wherein changing the intensity distribution of the radiation beam includes changing each portion of the second distribution by no more than about five percent relative to the corresponding portion of the first distribution.

10. (Original) The method of claim 1 wherein impinging the radiation beam with the second intensity distribution on the microlithographic substrate includes irradiating a first portion of the microlithographic substrate with radiation at a first intensity and irradiating a second portion of the microlithographic substrate with radiation at a second intensity, the second portion of the microlithographic substrate being spaced apart from the first portion of the microlithographic substrate by a distance of about 0.3 millimeters or greater.

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cont. 11. (Original) The method of claim 1 wherein the radiation beam has an average intensity after impinging on the adaptive structure, and wherein impinging the radiation beam on the microlithographic substrate includes impinging radiation with a higher than average intensity on a first field of the microlithographic substrate and impinging radiation with a lower than average intensity on a second field of the microlithographic substrate.

12. (Original) The method of claim 1 wherein the radiation beam has an average intensity after impinging on the adaptive structure, and wherein impinging the radiation beam on the microlithographic substrate includes impinging radiation with a higher than average intensity on a first die of the microlithographic substrate and

impinging radiation with a lower than average intensity on a second die of the microlithographic substrate.

13. (Original) The method of claim 1, further comprising changing a shape of the radiation beam after impinging the radiation beam on the adaptive structure.

14. (Original) The method of claim 1 wherein impinging the radiation beam on the microlithographic substrate includes impinging the radiation beam on a photosensitive layer of the microlithographic substrate.

15. (Currently Amended) A method for controlling an intensity distribution of radiation directed to a microlithographic substrate, comprising:

directing a radiation beam from a radiation source along a radiation path toward a microlithographic substrate;

impinging a first portion of the radiation beam on a first portion of a selectively transmissive medium and impinging a second portion of the radiation beam on a second portion of the selectively transmissive medium;

changing a transmissivity of at least one of the first and second portions of the selectively transmissive medium relative to the other;

passing at least part of at least one of the first and second portions of the radiation beam through the selectively transmissive medium to impinge on the microlithographic substrate, while at least inhibiting passage of at least part of the other of the first and second portions of the radiation beam through the selectively transmissive medium; and

directing the radiation beam away from the selectively transmissive medium along the radiation path and passing the radiation beam through a reticle positioned between the selectively transmissive medium and the microlithographic substrate; and

~~to impinge on the~~ radiation beam on the microlithographic substrate.

16. (Original) The method of claim 15 wherein the radiation beam has a first intensity distribution upon impinging on the selectively transmissive medium, and wherein the method further comprises changing an intensity distribution of the radiation beam directed away from the selectively transmissive medium to a second intensity distribution different than the first distribution by changing a transmissivity of at least one of the first and second portions of the selectively transmissive medium relative to the other.

17. (Original) The method of claim 15 wherein impinging the radiation on a selectively transmissive medium includes impinging the radiation on a liquid crystal material, and wherein changing a transmissivity includes changing the first portion of the selectively transmissive medium to be opaque.

18. (Original) The method of claim 15 wherein impinging the radiation on a selectively transmissive medium includes impinging the radiation on a liquid crystal material, and wherein changing a transmissivity includes reducing the transmissivity of the first portion of the selectively transmissive medium without making the first portion opaque.

19. (Original) The method of claim 15, further comprising selecting the radiation beam to have a wavelength of about 365 nanometers or less.

20. (Original) The method of claim 15 wherein impinging the radiation beam on the microlithographic substrate includes impinging the radiation beam on a radiation-sensitive material of the microlithographic substrate.

21. (Original) The method of claim 15 wherein impinging the radiation beam on the microlithographic substrate includes impinging the radiation beam on a photoresist layer of the microlithographic substrate.

22. (Currently Amended) A method for controlling an intensity distribution of radiation directed to a microlithographic substrate, comprising:

directing a radiation beam from a radiation source along a radiation path toward a microlithographic substrate;

impinging a first portion of the radiation beam on a first portion of athe reflective medium and impinging a second portion of the radiation beam on a second portion of the reflective medium;

moving the first portion of the reflective medium relative to the second portion of the reflective medium;

reflecting at least part of the first portion of the radiation beam toward a first portion of a grating having a first transmissivity and reflecting at least part of the second portion of the radiation beam toward a second portion of the grating having a second transmissivity greater than the first transmissivity; and

passing at least part of the second portion of the radiation beam through the grating to impinge on the microlithographic substrate while attenuating and/or blocking at least part of the first portion of the radiation beam from passing through the grating.

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23. (Original) The method of claim 22 wherein the radiation beam has a first intensity distribution upon impinging on the reflective medium, and wherein the method further comprises changing an intensity distribution of the radiation beam passing through the grating to a second intensity distribution different than the first distribution.

24. (Original) The method of claim 22 wherein the microlithographic substrate has a layer of radiation-sensitive material and wherein passing the radiation through the grating to impinge on the microlithographic substrate includes directing the first portion of the radiation to impinge on the radiation-sensitive material.

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25. (Original) The method of claim 22, further comprising selecting the grating to have an open area of at least about 90 percent.

26. (Original) The method of claim 22 wherein moving the first portion of the reflective medium relative to the second portion of the reflective medium includes tilting a reflective surface of the first portion relative to the radiation path to an angle different than an angle between the radiation path and a reflective surface of the second portion.

27. (Original) The method of claim 22, further comprising absorbing radiation incident on the first portion of the grating with absorbent material on the opaque portion of the grating.

28. (Original) The method of claim 22, further comprising selecting the radiation beam to have a wavelength of about 365 nanometers or less.

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

29 ~~35~~ (Original) A method for controlling intensity distributions of radiation directed to microlithographic substrates, comprising:

directing a radiation beam from a radiation source along a radiation path toward a first microlithographic substrate;
forming an image on a surface of the microlithographic substrate;
based on the image, forming a feature of the microlithographic substrate;
determining a difference between a characteristic of the feature and a target characteristic;
based on the difference between the characteristic of the feature and the target characteristic, determining a difference between an intensity distribution of radiation impinging on the first microlithographic substrate and a target intensity distribution;
at least partially reducing the difference between the intensity distribution and the target intensity distribution by positioning an adaptive structure in the radiation path and changing a state of a first portion of the adaptive structure relative to a second portion of the adaptive structure to redirect at least part of the radiation; and
directing radiation from the radiation source along the radiation path to impinge on the adaptive structure and a second microlithographic substrate.

30 ~~36~~ (Original) The method of claim ²⁹~~35~~ wherein forming an image on a surface of the microlithographic substrate includes forming an image on a radiation-sensitive material of the microlithographic substrate.

31 ~~37~~ (Original) The method of claim ²⁹~~35~~ wherein forming a feature of the microlithographic substrate includes forming a conductive structure of the microlithographic substrate, and wherein determining a difference between a characteristic of the feature and a target characteristic includes determining a difference between a conductivity of the conductive structure and a target conductivity.

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32 38 (Original) The method of claim 35 wherein determining a difference between a characteristic of the feature and a target characteristic includes determining a difference between a dimension of the feature and a target dimension.

33 38 (Original) The method of claim 35 wherein determining a difference between a characteristic of the feature and a target characteristic includes determining a difference in a characteristic of an etched feature.

34 40 (Original) The method of claim 35 wherein determining a difference between a characteristic of the feature and a target characteristic includes determining a difference caused by passing the radiation beam through a reticle.

35 41 (Original) The method of claim 35 wherein the adaptive structure includes a reflective surface having a first portion coupled to a first actuator and a second portion coupled to a second actuator, and wherein impinging the radiation beam includes impinging a first portion of the radiation beam on the first portion of the reflective surface and impinging a second portion of the radiation beam on the second portion of the radiation surface, and wherein changing a state of the first portion of the adaptive structure relative to a second portion of the adaptive structure includes moving the first portion of the reflective surface relative to the second portion of the reflective surface, and wherein the method further comprises:

reflecting at least part of the first portion of the radiation beam toward a first portion of a grating having a first transmissivity and reflecting at least part of the second portion of the radiation beam toward a second portion of the grating having a second transmissivity greater than the first transmissivity; and

passing at least part of the second portion of the radiation beam through the grating to impinge on the microlithographic substrate.

~~36~~²⁴ 42. (Original) The method of claim ~~35~~²⁴ wherein the adaptive structure includes a selectively transmissive medium, and wherein changing a state of the first portion of the adaptive structure relative to the second portion includes changing a transmissivity of the first portion to be different than a transmissivity of the second portion.

~~37~~²⁴ 43. (Original) The method of claim ~~35~~²⁴ wherein the adaptive structure includes a liquid crystal material, and wherein changing a state of the first portion of the adaptive structure relative to the second portion includes changing a transmissivity a first portion of the liquid crystal material relative to a transmissivity of a second portion of the liquid crystal material.

~~38~~²⁴ 44. (Original) The method of claim ~~35~~²⁴, further comprising:

passing the radiation beam through a reticle positioned between the adaptive structure and the microlithographic substrate to form an image on the microlithographic substrate; and

scanning the reticle and the microlithographic substrate relative to each other by moving the reticle along a reticle path generally normal to the radiation path proximate to the reticle and moving the microlithographic substrate along a substrate path in a direction opposite the reticle and generally normal to the radiation path.

~~39~~²⁴ 45. (Original) The method of claim ~~35~~²⁴, further comprising:

passing the radiation beam through a reticle positioned between the adaptive structure and the microlithographic substrate to form an image on the microlithographic substrate; and

stepping the microlithographic substrate and the reticle relative to each other by impinging the radiation beam on a first field of the microlithographic substrate while the microlithographic substrate is in a first fixed transverse alignment relative to the reticle, moving at least one of the reticle and the



microlithographic substrate transversely relative to the other to align a second field with the reticle, and exposing the second field to the radiation beam while the microlithographic substrate is in a second fixed transverse alignment relative to the reticle.

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46-69 (Cancelled)

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